

CLAIMS

What is claimed is:

- 1 1. A high temperature rigid fiber board formed by a process
2 comprising the steps of:
3 providing a fibrous material, the fibrous material including
4 alumina silica fiber, soluble fiber, mineral wool or a combination
5 thereof;
6 performing fiberization;
7 forming a fibrous mat;
8 accumulating layers of built-up fibrous mat;
9 heating and pressing the fibrous mat to achieve a desired
10 thickness thereof; and
11 drying the fibrous mat to form a fibrous high temperature
12 pressed board product.
- 1 2. The fiber board formed by a process in accordance with
2 claim 1, the process further comprising the step of: adding a filler
3 material.
- 1 3. The fiber board formed by a process in accordance with
2 claim 1, the process further comprising the step of: adding
3 dry/granular binder.
- 1 4. The fiber board formed by a process in accordance with
2 claim 2, the process further comprising the step of: adding
3 dry/granular binder.
- 1 5. The fiber board formed by the process of claim 3, further
2 comprising the step of adding the binder just after the fiberization
3 step and before the formation of the fibrous mat.

1 7. The fiberboard formed by the process of claim 3, further
2 comprising the step of adding water to dissolve the binder.

1 9. The fiberboard formed by the process of claim 7, wherein
2 the water is added in the form of encapsulated moisture in the same
3 vicinity the binder is added.

1 11. The fibrous board of claim 10, wherein the fiber is selected
2 from the group consisting of alumina silica fiber, soluble fiber, mineral
3 wool or any combination of thereof.

1 13. The fibrous board of claim 11, wherein the ceramic fiber
2 and mineral wool are adhered by at least one binder.

1 15. The fibrous board of claim 14, wherein the inorganic
2 binder is selected from the group consisting powder or granular

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1 24. The fibrous board of claim 10, wherein the binder is added
2 into the process as, or just after, the fiber is being produced or as the
3 mat or fleece is being developed.

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1 25. The fiberboard formed by the process of claim 8, wherein
2 water spray is added to the top and bottom surfaces at a rate of 10-
3 30% of fiber basis weight on each of the two surfaces.

1 26. The fiberboard formed by the process of claim 25, wherein
2 the water further comprises wetting agents to improve water
3 penetration into the fiber mat.

1 27. The fiberboard of claim 25, wherein the density and
2 thickness is determined by being subjected to a hot press at a
3 temperature sufficient to produce steam and for a period of time
4 sufficient to dry or nearly dry the board. Typical temperatures are
5 350°F-600°F.

1 28. A process comprising a fiber board incorporating fiber,
2 binder(s), fillers, and using a process wherein the binders are added at
3 or just after a point of fiberization and before formation of a fibrous
4 mat from which the boards are produced in a continuous manner,
5 whereby accumulating wheels of layers of built up fibrous mat of
6 desired thickness is pressed and dried into high temperature fiber
7 boards.

1 29. A process comprising a fiber board incorporating fiber,
2 binder(s), fillers, and using a process wherein the binders are added at
3 or just after a point of fiberization and before formation of a fibrous
4 mat from which the boards are produced in a continuous manner,
5 whereby accumulating wheels of layers of continuous mat of desired
6 thickness is pressed and dried into high temperature fiber boards.

1 30. A process comprising a fiber board, free of fillers,
2 incorporating fiber, binder(s) and using a process wherein the binders

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3 are added at or just after a point of fiberization and before formation
4 of a fibrous mat from which the boards are produced in a batch
5 manner, whereby accumulating wheels of layers of built up fibrous mat
6 of desired thickness is pressed and dried into high temperature fiber
7 boards.

1 31. A process comprising a fiber board incorporating fiber,
2 binder(s), fillers, and using a process wherein the binders are added at
3 or just after a point of fiberization and before formation of a fibrous
4 mat from which the boards are produced in a batch manner, whereby
5 accumulating wheels of layers of continuous mat of desired thickness
6 is pressed and dried into high temperature fiber boards.

1 32. A pressed ceramic fiber board comprising a ceramic
2 fiber, an inorganic binder and a filler.

1 33. A pressed ceramic fiber board comprising about 70-98%
2 weight percent of alumina silica fiber, soluble fiber, mineral wool or
3 any combination of thereof, about 2-20% of powder or granular
4 potassium silicate, sodium silicate or other silicate materials, or
5 phosphate or phosphate based materials and combinations thereof,
6 and about 0-15% of clay, cement, perlite, or vermiculite and
7 combinations thereof.

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